

Notice of Allowability

Application No.

10/712,338

Examiner

William H. Rodriguez

Applicant(s)

KNIGHT, ANDREW F.

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the communication filed on 4/1/05.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>11/14/03</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION***Allowable Subject Matter***

1. Claims 1-20 are allowed.

With respect to claim 1, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a cool gas generator comprising: "a heat exchanger connected to the first storage tank at a first end and connected to the nozzle at a second end, the heat exchanger configured to plumb the high-pressure liquid propellant from the first storage tank to the nozzle, wherein the heat exchanger is connected to the combustion chamber so that heat from the hot product gas is transferred to the high-pressure liquid propellant through heat-conducting walls of the heat exchanger to thereby raise a temperature of the high-pressure liquid propellant to substantially gasify the high-pressure liquid propellant, wherein the nozzle is configured to expel the substantially gasified high-pressure liquid propellant from the gas generator and, during the expulsion, to expand the substantially gasified high-pressure liquid propellant, and wherein the gas generator is configured so that an expansion temperature of the substantially gasified high-pressure liquid propellant to be expanded by the nozzle is substantially lower than the melting temperature", in combination with the other claim limitations.

With respect to claim 6, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a cool gas generator comprising: "a heat

Art Unit: 3746

source connected between the first storage tank and the nozzle and configured to add heat to the high-pressure liquid propellant at a heat transfer rate to substantially gasify the high-pressure liquid propellant, wherein the nozzle is configured to expel the substantially gasified high-pressure liquid propellant from the gas generator and, during the expulsion, to expand the substantially gasified high-pressure liquid propellant, and wherein the gas generator is configured so that an expanded temperature of the substantially gasified high-pressure liquid propellant after being expanded by the nozzle is in the range -50 degrees Celsius to 100 degrees Celsius; and a controller connected to the heat source and configured to adjust the heat transfer rate”, in combination with the other claim limitations.

With respect to claim 15, the following is an examiner's statement of reasons for allowance: the prior art of record neither discloses nor makes obvious the combination set forth in the independent claims, and especially does not show a cool gas generator comprising: “a first heat source; a first heat exchanger connecting the first heat source to at least one of the means and the nozzle so that heat from the first heat source is transferred to the high-pressure liquid propellant through heat-conducting walls of the first heat exchanger to thereby gasify the high-pressure liquid propellant; a second heat source; and a second heat exchanger connecting the second heat source to at least one of the means and the nozzle so that heat from the second heat source is transferred to the gasified high-pressure liquid propellant to thereby raise a temperature of the gasified high-pressure liquid propellant above a temperature of the high-pressure liquid propellant”, in combination with the other claim limitations.

Art Unit: 3746


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodriguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William H. Rodriguez
Examiner
Art Unit 3746
5/13/05